REMARKS

Claims 1-8 are pending; claims 1 and 3-6 have been amended and claim 8 has been added.

Support for the amendments to claim 1 are found on page 2, line 33, and on page 1, lines 14-16.

Support for claim 8 is found on page 1, lines 32-36, page 2, lines 19-21, and the example on page 3.

The rejections of claims 1-7 under 35 USC 112, second paragraph are believed to have been overcome by the above amendments. As for item a.5. of the office action, antecedent basis is not believed to be necessary since a circulating pump is known to have an inlet, i.e.,suction side, and an outlet, i.e., discharge side.

Claims 1-7 stand rejected as being obvious over JP 50002498 (actually, an abstract thereof) in view of Watson et al. (US 4,466,904).

4-tert-butylcatechol (TBC) is normally used to stabilize styrene during storage (page 1, lines 10-12) or in synergistic mixtures for distillation (page 1, lines 22-26). For many polymerization processes it is desirable to use unstabilized styrene. The inventors found a cheap process for destabilization and purification of styrene without the need to add further polymerization inhibitors (page 2, lines 19-21). The comparative example demonstrates that without addition of an oxygen-containing gas the longer the distillation process proceeds the more polymer is formed in the bottoms of the distillation assembly which means a loss in styrene monomer.

Morimoto (abstract of JP 50002498 B4) discloses a process for the separation and purification of styrene from a C8 aromatic hydrocarbon fraction after the mixture has been treated with a Diels-Alder reaction reagent such as maleic anhydride. Morimoto does not describe the distillation of vinyl aromatic monomers in the presence of oxygen or an oxygen containing gas. Based on the abstract Morimoto apparently is not concerned with high yields or polymer formation during the purification process. Thus this reference does not substantially disclose the process or claim 1.

Watson et al. (US 4,466,904) describe synergistic inhibitor mixtures comprising 2,6-dinitro-p-cresol, phenothiazine and 4-tert-butylcatechol which are used in the presence of oxygen. All three inhibitors are essential ingredients of the inhibiting mixture (Col. 6, lines 54-64). In view of the teaching of Watson et al. the person skilled in the art would therefore not distill styrene in the absence of 2,6-dinitro-p-cresol (DNPC) which is an aromatic nitro compound. In other words, in view of this teaching, one would not use oxygen in the process of JP '498 in the absence of 2.6-dinitro-p-cresol. The claims, of course, exclude the present of amounts of nitro compounds sufficient to prevent polymerization. The process of Watson et al. requires an effective amount of the 2,6-dinitro-p-cresol (page 2, lines 12-14; claim 1).

New claim 8 is also patentable over this art since it excludes stabilizers other than 4-tert-butylcatechol.

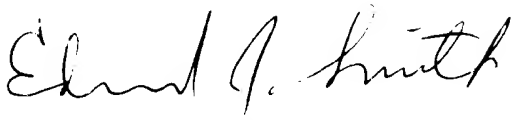
Favorable action by the examiner is respectfully solicited.

Please charge any shortage in fees due in connection with the filing of this

paper, including Extension of Time fees to Deposit Account No. 11-0345. Please credit any excess fees to such deposit account.

Respectfully submitted,

KEIL & WEINKAUF



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COPY WITH MARKINGS TO SHOW CHANGES MADE

Amend claims 1-7 and add new claim 8 as follows:

1. (amended) A process for the distillation of vinyl aromatic monomers in the presence of 4-tert-butylcatechol (TBC) and oxygen or an oxygen-containing gas wherein no aromatic nitro or amino compound is present in any effective amount to prevent polymerization.

3. (twice amended) A process as defined in claim 1, wherein 4-tert-butylcatechol is fed to a [the] distillation assembly [apparatus] concurrently with the vinyl aromatic monomer, the concentration of 4-tert-butylcatechol in the bottom mixture of the distillation assembly [bottoms] being in the range of from 200 to 15,000 ppm based on the vinyl aromatic monomer.

4. (twice amended) A process as defined in claim 1, wherein the [vacuum] distillation is carried out under vacuum at temperatures ranging from 40° to 125°C.

5. (twice amended) A process as defined in claim 1, wherein an oxygen-containing gas is metered into the bottom mixture of the distillation assembly [bottoms] through a gas spray.

6. (twice amended) A process as defined in claim 1, wherein an oxygen-containing gas is metered [meter] in on the suction side of a circulating pump mounted upstream of a [the] distillation assembly.

8. (new) A process for destabilization and purification of styrene stabilized with 4-tert-butylcatechol, wherein styrene is evaporated in the presence of oxygen or an

oxygen-containing gas without addition of further polymerization inhibitors.

COPY OF ALL CLAIMS

1. (amended) A process for the distillation of vinyl aromatic monomers in the presence of 4-tert-butylcatechol (TBC) and oxygen or an oxygen-containing gas wherein no aromatic nitro or amino compound is present in any effective amount to prevent polymerization.

2. A process as defined in claim 1, wherein the vinyl aromatic monomer used is styrene.

3. (twice amended) A process as defined in claim 1, wherein 4-tert-butylcatechol is fed to a distillation assembly concurrently with the vinyl aromatic monomer, the concentration of 4-tert-butylcatechol in the bottom mixture of the distillation assembly being in the range of from 200 to 15,000 ppm based on the vinyl aromatic monomer.

4. (twice amended) A process as defined in claim 1, wherein the distillation is carried out under vacuum at temperatures ranging from 40° to 125°C.

5. (twice amended) A process as defined in claim 1, wherein an oxygen-containing gas is metered into the bottom mixture of the distillation assembly through a gas spray.

6. (twice amended) A process as defined in claim 1, wherein an oxygen-containing gas is metered in on the suction side of a circulating pump mounted upstream of a distillation assembly.

7. A process as defined in claim 1, wherein the oxygen is fed in at a rate of from

0.01 to 0.5 wt%, based on the weight of vinyl aromatic monomer.

8. (new) A process for destabilization and purification of styrene stabilized with 4-tert-butylcatechol, wherein styrene is evaporated in the presence of oxygen or an oxygen-containing gas without addition of further polymerization inhibitors.